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R&D Chronicles: Dr. Niiranen and the Birth of “Mr. Disaster”

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Mr. Disaster on Exhibit, ca. 1953. All photos from BUMED Archives

“As gruesome as it may be, the realism of the plastic manikin is expected to play an important part in helping to indoctrinate military personnel to their roles as emergency physicians in the event of an atomic attack or other emergencies.”

~Modern Plastics on the Invention of “Mr. Disaster,” March 1954

In September 1949, Cmdr. Victor Niiranen (1916-1993) reported to the National Naval Medical Center, Bethesda, Maryland, as the new head of the Audio and Visual Department. Perhaps this was not the most typical assignment for a dentist, but the World War II veteran and maxillofacial prosthodontist took to the position with great gusto. Over the next four years, Niiranen devised numerous innovative training aids for the Navy including a life-like arm with simulated veins for practicing injections and blood withdrawal; he also developed a special mouth guard (“resilient plastic interdental splint”) for the National Boxing Association to prevent dental trauma in the boxing ring. But without a doubt Niiranen’s most famous creation would also have the most unforgettable name: “Mr. Disaster.”

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First exhibited by Niiranen August 17, 1953, before a Navy audience in Washington, D.C, Mr. Disaster (aka, “Mark I”) was a life-size manikin used for demonstrating the treatment of trauma injuries. The pioneering simulacrum was sculpted by artist Louis Di Valentin (1907-1982) and was made of plastic reinforced with fiberglass.

What made this manikin truly innovative was a patented system for pumping “blood” (glycerin, water and red vegetable dye) to six major wound points on the legs, arms, abdomen, chest and mouth. The rate of blood flow was controlled by individual valves and the blood was stored in a tank at the manikin’s base.

Mr. Disaster could be used to simulate everything from penetrating chest wounds to jaw fractures, and even choking by foreign body in the throat.

For Niiranen, Mr. Disaster was born out of a need for a “realistic” casualty care training aid for all members of the Navy; but he also knew it had value beyond the military services. From 1953 to 1956, Niiranen hit the road exhibiting the manikin at 34 dental and medical meetings across the country, and covering some 53,000 miles in the process. He would even appear on the popular television show, *You Asked for It*, demonstrating the manikin’s versatility before an estimated nation-wide audience of 20 million viewers.

Niiranen would receive a Legion of Merit for his role in designing and constructing medical instruments, maxillofacial prostheses and training aids like Mr. Disaster. He retired from the Navy as a Captain in 1971 and settled in Hawaii where he pursued a career as an artist.

Mr. Disaster’s legacy lives on in the numerous manikin simulators regularly used by both military and civilian organizations. Today, these “descendants” do more than just bleed; models like the SimMan and others can be programmed to blink, simulate neurological responses and even speak. And as Niiranen correctly recognized over sixty years ago, manikins are (and remain) indispensable teaching tools in medicine.

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